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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTOR: Yoshihiro Kobayashi) Group Art Unit: 1792
SERIAL NO: 10/607,915) Examiner: James Lin
FILED: 06/27/2003)
TITLE: METHOD FOR MANUFACTURING ELECTROLUMINESCENT
ELEMENT

Mail Stop Amendment

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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted to the United States Patent and Trademark Office to the fax number and on the date indicated above.


Valerie Neymeyer-Tynkov, Reg. No. 46,956**SUMMARY OF INTERVIEW WITH EXAMINER**

A summary of a telephone interview that occurred on July 2, 2008 between the below-signed representative ("VNT") and Examiner James Lin ("the Examiner") is below.

To begin the interview, VNT noted to the Examiner that claims 12, 17 and 18 are pending in the application, that claims 17 and 18 depend from claim 12, and briefly reviewed the elements of claim 12 with the Examiner. VNT emphasized those elements relating to the film, the printing method using an intaglio, the claimed viscosity range of 0.5 to 500 cP of the light emitting layer forming coating solution, and the claimed depth of the groove/cell of the intaglio as 500 Å – 1mm. VNT also pointed out that the light emitting layer forming coating solution of the present invention would have a contact angle of 20° or less with a base material, in forming the film of the present invention.

Next, VNT pointed out paragraphs 5-7 of the application as published by the USPTO, and their discussion of the state of the art relevant to the present invention. Conventional printing methods such as shadowmask/inkjet methods are discussed, and problems therein such as inefficient use of material, difficulty in forming even layers of a desired thickness, the imprecision of such methods

which may distort the final product unless a highly sophisticated vacuum device is used; with regard to inkjet methods in particular, the need for applying pre process layers to support patterning, resulting in a complicated manufacturing process.

VNT also reviewed paragraph 9 of the present application as published, disclosing the manufacture of thin, electroluminescent layers with an even film thickness, and disclosing that problems with the prior art may be solved with the intaglio printing method claimed in claim 12. VNT also pointed out paragraph 52 of the present application, further emphasizing the need for evenness and thinning of the layer of the present invention, and the benefits of a solution having low viscosity and that is thinly wet, easily spread. VNT also pointed out that paragraph 53 discloses the importance of the claimed range of 0.5-500cP: a viscosity less than 0.5 cP results in a layer that is not even, and a viscosity greater than 500 cP is hard to spread and does not provide for even wetting.

VNT also noted that Examples 1-3 of the present application illustrate embodiments of the invention: Example 1 uses a solution having a viscosity of 0.5 cP; Example 2 uses a solution having a viscosity of 250 cP; and Example 3 uses a solution having a viscosity of 500 cP. In contrast, Comparative Examples 1 and 2 disclose the use of 0.4 cP and 550 cP, respectively, with each Comparative Example failing to obtain an even light emitting layer film.

VNT then reviewed the Examiner's rejection in the present Action based on Towns et al. (US 6,153,711). VNT noted that in the current Office Action, the Examiner rejects claim 12 as obvious in view of another document that does not expressly disclose a coating solution having a viscosity of 0.5 to 500 cP. VNT reviewed Towns column 2 lines 56-67 and column 7 lines 7-11 with the Examiner, and noted that column 2 lines 56-67 generally disclose 1-200 cps viscosity, but also (ex. col. 2 line 67) disclose a specific viscosity for ink jet methods of less than 5 cps. With regard to column 7 lines 7-11, VNT noted that disclosure refers to different techniques but not to a specific viscosity. However, column 7 lines 19-22 disclose a preferred viscosity of 200 cps for blade coating and less than 5 cps for spin coating.

VNT then noted in particular that in the present invention, ink having a viscosity of 0.5 cP to 500 cP can be used for intaglio printing because spreading of the ink can be controlled by controlling the wettability (or contact angle) between the ink and the base material, and discussed with the Examiner comments along the line of those comments included in the response filed in this application on July 12, 2008.

According to VNT's respectful recollection, the Examiner stated that Towns discloses generally trying to adjust the viscosity of a solution, and that Towns' method applies to standard solutions, as disclosed at column 1 lines 28-38. In response, VNT pointed out that Towns column 1 lines 28-38 relates to the state

of the art and not to Towns' invention, and that Towns discloses different specific viscosities for different techniques. VNT directed the Examiner for instance to column 5 lines 27-42 and column 7 lines 19-22. VNT pointed out that column 5 lines 27-42 disclose for instance that viscosities of solutions for spin coating may be from 100-700 cPs, ink jet printing is preferably less than 5 cps, more preferably about 3.75 cps, and that blade coating is more than 200 cps. VNT indicated that regardless of the disclosure at column 2 lines 56-67 of 1-200 cP, one skilled in the art reading Towns would not be taught to use a solution having a viscosity of 1-200 cP in an intaglio printing method as in the present invention. Rather, one skilled in the art would be taught away from the present invention by Towns, by being taught different specific viscosity ranges for different methods.

At the end of the interview, according to VNT's respectful recollection, the Examiner indicated that he would revisit his view of Towns in view of our discussion, in particular regarding the criticality of the range of viscosity and the disclosure in paragraph 53 of the application regarding problems with viscosities that are too low or too high.

Respectfully submitted,

July 12, 2008

Date



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